SunLine Fuel Cell Buses & Hydrogen Onsite Generation Refueling Station Pilot Commercial Deployment Project

The *SunLine Fuel Cell Buses & Hydrogen Onsite Regeneration Fueling Station Pilot Commercial Deployment Project* will deploy five new 40-foot fuel cell electric transit buses (FCEBs) in daily service on two regular service routes in the Coachella Valley. The project also includes upgrading SunLine's existing hydrogen refueling station with a new electrolyzer hydrogen production plant, supporting compression and storage equipment, and two 350-bar fueling dispensers. The station will have a total fueling capacity of 900 kg/day. Data will be collected and analyzed for both the station and buses for the period of operation.

SunLine is a leader in zero-emission bus technology, and shares knowledge with other transit agencies through the West Coast Center of Excellence in Zero Emission Technology. The five New Flyer XHE40 Xcelsior® FCEBs will expand SunLine's fleet of zero emission buses to a total of fifteen FCEBs plus four BEBs.

Dates: 02/09/2017 – Spring 2020
Grantee: SunLine Transit Agency
Partners: New Flyer Industries
Nel Hydrogen Inc.
Zen Clean Energy Solutions

Grant Amount:

CARB Contribution:	$12,586,791
Matching Funds:	$5,214,619
Project Total:	$17,801,410

Xcelsior® XHE40 Bus


Electrolyzer Cell Stacks

Vehicles/Equipment Funded

New Flyer Xcelsior® XHE40 Buses
- Hydrogen-powered 40' fuel cell electric buses.
- Powered by Ballard FCveloCity-HD 85 kilowatt modules.
- Based on standard Xcelsior® CHARGE electric propulsion system.

Nel Hydrogen Production and Fueling Station
- 900 kg/day capacity.
- M400 series modular PEM electrolyzer.
- H2Station® modules deliver 350 bar hydrogen.
- Supplied as complete turnkey solution.

Lessons Learned
- Site civil design and construction costs much higher than budgeted.
- Utility upgrade costs – new power line to site – costly and time intensive.
- Bus technology mature, leveraging reliability improvements from previous generations.

Status Updates
- Major fueling station equipment modules complete by November 2018.
- All five buses delivered to SunLine by January 2019.
- Site construction started March 2019.